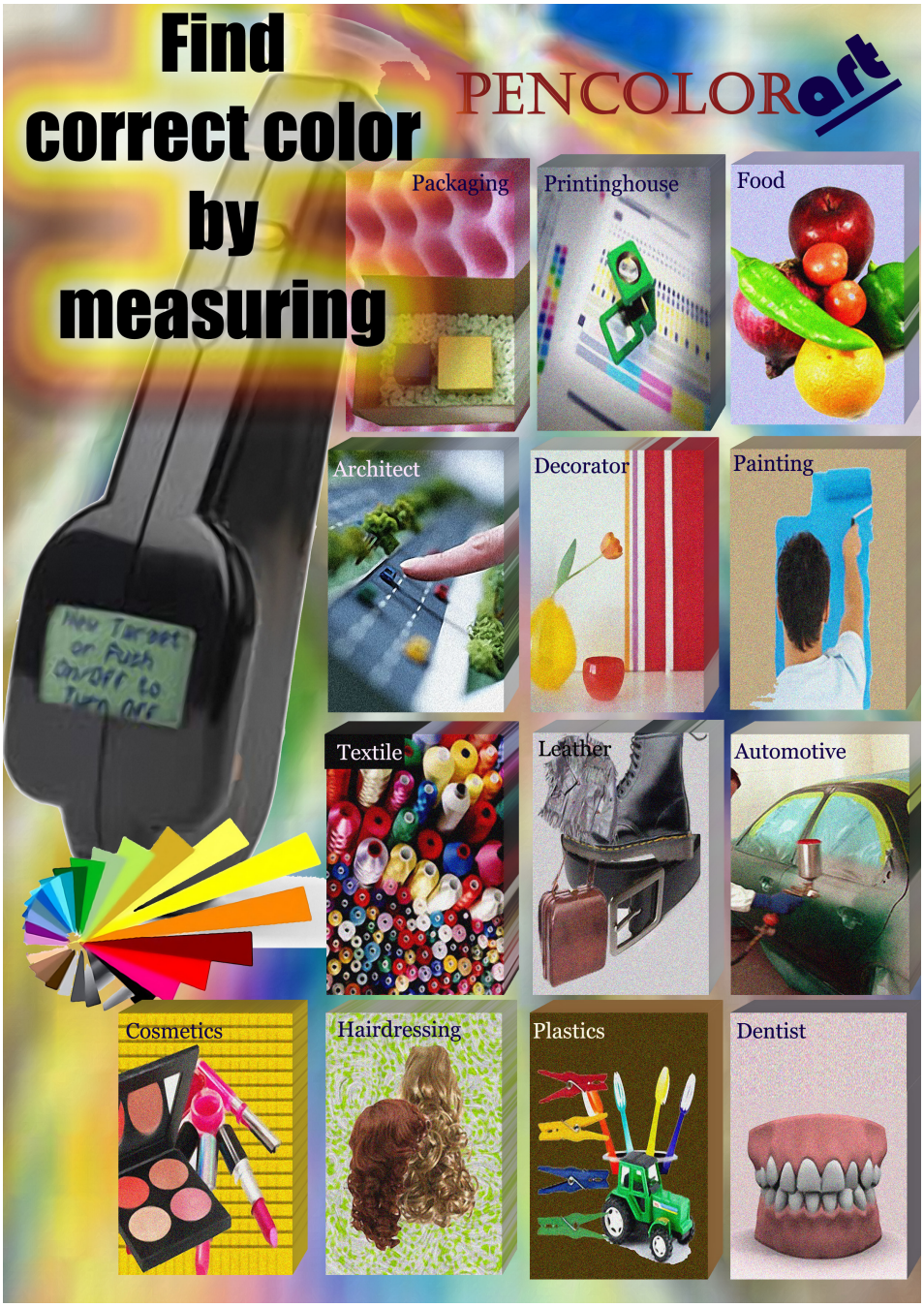
PenColorArt
Pocket size color measurement device

USER MANUAL
(for models of 1L and 3L)



Introduction

Human eye perceives the colors by special cells which are sensitive to certain colors. The special cells are called as “receptors”. The receptors in the eye are sensitive to three colors. These are Red, Green and Blue. There thousends of cells in the eye. This trichromacity is known as RGB.

We can perceive any color thank to receptors which are triggered by the light from the surface we look at. For example, say a purple color, resuls in the receptors of blue and red be triggered. The amount of blue and red receptors triggered identifies the sahde of purple. So, we can perceive many different purple colors.

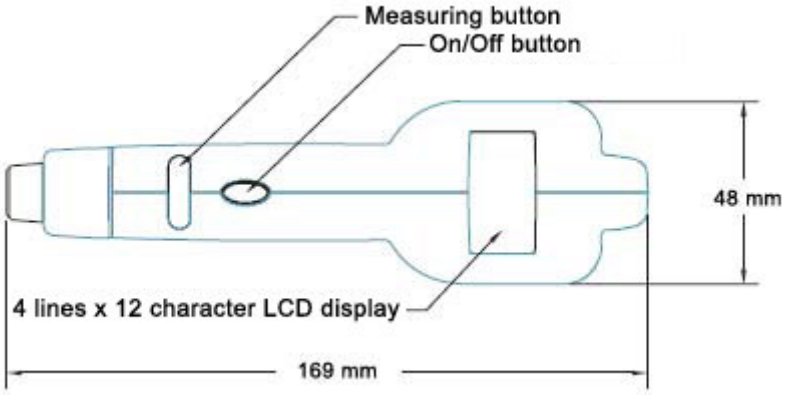
As like above, PenColorArt color measuring devices simulates humen eye. There are 3 different special electronics sensors which are dedicated to any of Red, Green and Blue lights.

PenColorArt can measure a color 256 bits resolution for each channel. This means that it can distinguish totaly 256 x 256 x 256 = 16777216 colors.

Using PenColorArt is extremelly easy. It has just two buton on it.

One of these buttons is for on/off function and the other one is to measure a color.

The buttons is shown in below illustration.



Opearating the device:

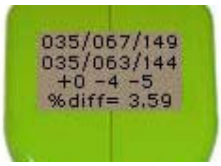
1) Making the device ON
   Just press ON/OFF buton once to maket he device ON.

2) Calibration:
   Place the “white calibration cap” which is hanged on the device.
   Pres measure buton

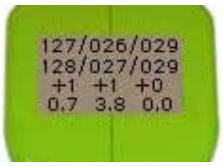
3) Measuring a color as Target
   Remove the cap.
   Put the measurement port of the device on the surface you want to measure. Remember that, measurement port should be placed on the surface without any gap to prevent the light goes in and out. You can use rubber accesories for beter results.
   Pres measurement button.
   You will see three different values at the top of the LCD of the device.

4) Measuring a color as sample/trial
   Put the measurement port of the device on the surface you want to measure. Remember that, measurement port should be placed on the surface without any gap to prevent the light goes in and out. You can use rubber accesories for beter results.
   Press measurement button.
   Depending on the device model, similar results below will be appeared on the screen.

Model 1L



Model 3L



Let explain the meaning of the values.

The first three lines are identical for both model.

Line 1: RGB values of the measured Target color. These values are between 0 to 255.
Line 2: RGB values of the measured Sample color. These values are between 0 to 255.
Line 3: Numerical differences between two RGB values in each channel.
Line 4: For model 1L → Total difference as percentage of the values in line 3
For model 3L → Differences as percentage in each channel seperately of the values in line 3

The first value, Target, will remain unchanged unless the device is shut down. All subsequent measurements are considered as “Sample” color and compared to “Target”.

PASS/FAIL limitations:
An avarage human eye can not detect the difference of two colors less than %1.5. This means that you can assume the colors are matched if the difference is less than %1.5. It’s obvious that %0 refers to “perfect match”

In many applications, %5 difference is acceptible for customers. It is beter to set a limit according to your customer’s expectations.